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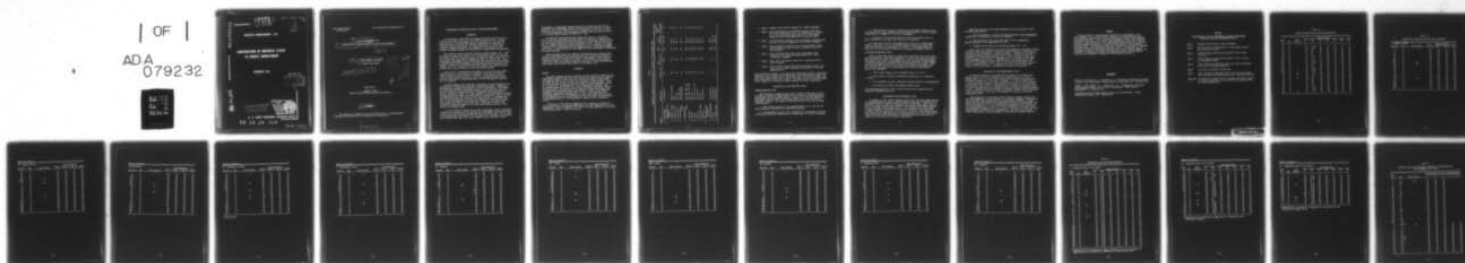
ARMY PERSONNEL RESEARCH OFFICE WASHINGTON DC  
CONSTRUCTION OF EMPIRICAL SCALES TO PREDICT REENLISTMENT.(U)  
APR 64 L J KOTULA , L K WATERS

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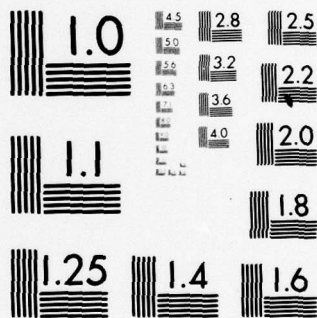
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**RESEARCH MEMORANDUM 64-1**

**CONSTRUCTION OF EMPIRICAL SCALES  
TO PREDICT REENLISTMENT**

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9 Research Memorandum 64-1

6 CONSTRUCTION OF EMPIRICAL SCALES TO PREDICT REENLISTMENT.

12/26

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Submitted by

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11 April 1964

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## CONSTRUCTION OF EMPIRICAL SCALES TO PREDICT REENLISTMENT

### BACKGROUND

An insufficient reenlistment rate among first-term enlisted men is of concern to the Army as well as to the other military services. Of particular concern is the reenlistment rate for specialists in technical and craftsman areas in whom the Army invests considerable time and money in school and on-the-job training. The high turnover rate in these areas increases training expenditures and frequently reduces quality of performance by making necessary the introduction of inexperienced replacements.

Such studies as that conducted by Dancer-Fitzgerald-Sample, Inc. (1957) have indicated that reasons given for not reenlisting reflect not only the individual's interests and needs, but to an important degree the attractions and frustrations of the Army as compared to those of civilian life. As a consequence, improvement in the reenlistment rate can theoretically be made by increasing the attractiveness of the Army and minimizing its difficulties. Attempts to stimulate reenlistment through military career programs, bonus systems, choice of occupation in which to be trained, and other incentives offered only a partial solution to the reenlistment problem.

With a view to alleviating the situation at the classification stage, DCSPER initiated a requirement for development of measures to identify enlisted personnel who are likely to reenlist. These measures could be used in initial classification as a basis for assigning qualified career-motivated personnel to occupational areas in which training and retention are most critical.

The APRO research effort has been concentrated on the development of an experimental self-description inventory covering attitudinal, personality, and background variables hypothesized to predict reenlistment. This instrument was developed after an intensive review of Army, Navy, and Air Force surveys related to reenlistment and/or reenlistment intention (Johnson, Klieger, and Kotula, 1958). For scale construction and validation of content, the experimental instrument was administered to approximately 6000 first-term enlistees upon entry into service in the spring of 1958. A subsample was followed up after one year of service for reenlistment intention and retest data. Final reenlistment action data were obtained on the overall sample upon expiration of term of service in 1961. Additional test data were obtained on a separate sample of 557 first-term enlistees tested at end of term in the spring of 1958.

As a step toward the prediction of final reenlistment action, preliminary research was concerned with the prediction of reenlistment intention and with evaluation of the predictors through the first enlistment term. Of 631 items in the experimental instruments, 210 were found to be correlated with reenlistment intention upon entry into service (Helme, Kotula, and Fitch, 1960).

Subsequently, a considerably reduced item pool (76 items) was found to be correlated with reenlistment intention after one year of service. A further reduction in the valid item pool was to be expected at end of term in view of the low relationship with reenlistment intention after one year of service ( $r = .42$ ) and after 33 months of service ( $r = .20$ ).

Of predictor items administered at entry into service, a two-choice item in which the respondent indicated whether he intended to reenlist and a five-choice item which permitted qualification of reenlistment intention were the best single predictors of final reenlistment action. For the two-choice item, a validity coefficient (product moment) of .23 was obtained in a sample consisting of 437 reenlistees and 1763 nonreenlistees. Coefficients ranging from .22 to .39 were obtained in other samples in which the number of reenlistees was relatively small.

These findings brought into question the usefulness for initial classification of any predictor scale composed of direct or implied statements of intention which could be developed to predict reenlistment, unless some provisions were made to increase its validity. The objective of the present study was to construct a general predictor scale and to develop supplementary scales which would increase the validity of the general scale.

## PROCEDURE

### SAMPLES

For scale construction and validation, the 6000 enlistees tested with the experimental inventory upon entry into service were divided into two samples: a development sample of 2200 cases and a validation sample of 1600 cases. The sample did not include men who were ineligible for reenlistment. Cases were also excluded in which evidence was found of careless marking--a score of 7 or above on a carelessness key in the experimental inventory. The development sample was divided into eleven occupational subsamples (Table 1) for the purpose of developing scales in specific occupational areas; these subsamples were necessarily small, particularly in terms of the number of reenlistees represented (ranging from 17 to 83). Also included in the development sample were two subsamples in which reenlistment intention and job performance data were obtained after one year of service and retest data (second administration of the experimental inventory) after 33 months of service.

Seven sets of item statistics (Sets A-G) were computed as a basis for scale construction, with Sets A-F applying to the first administration of the experimental inventory upon entry into service and Set G applying to the second administration after 33 months of service:



Table 1

## OVERVIEW OF SAMPLES AND ITEM STATISTICS OBTAINED IN REENLISTMENT STUDY

Sample	MOS Series	Reenlistees	Non-Reenlistees	Total N	Item Statistics	Reenlistment Percentage
1. Total Sample	all-inclusive	437	1763	2200	Sets B,E	20
2. Occupational sub-samples						
a. Combat 1 (high)	100.1 or greater	83	327	410	Set E	20
b. Combat 2 (low)	100.0	77	77	154	Set E	50
c. Electronics	200, 300	29	225	254	Set E	11
d. Mechanical 1 (high)	400, 500, 600 (.1, or greater)	44	253	297	Set E	15
e. Mechanical 2 (low)	400, 500, 600 (.0)	29	97	126	Set E	23
f. Operator	200, 310, 720, 005	25	147	172	Set E	15
g. Driver	620, 640	38	130	168	Set E	23
h. Clerk	710, 730, 760, 770	45	220	265	Set E	17
i. Service	910 thru 950	17	36	53	Set E	32
j. Military Police	951, 952	23	81	104	Set E	22
k. Technical	900 thru 930	27	170	197	Set E	14
3. Additional data subsamples						
a. Random subsample	all-inclusive	--	---	625	Set A	
b. 1-year	all-inclusive	--	---	779	Sets C,D	
c. 33-month retest	all-inclusive	--	---	573	Sets F,G	

1. Set A - original item p-values (computed in a random subsample)
2. Set B - item relationships to reenlistment intention upon entry into service expressed as CR's for differences in p-values in two criterion groups (Yes versus No on reenlistment intention, with an excluded middle of undecided cases)
3. Set C - item correlation (biserial) with reenlistment intention after one year of service (computed in the one-year subsample)
4. Set D - item correlation (biserial) with a job performance rating obtained after one year of service (computed in the one-year subsample)
5. Set E - item correlation ( $\phi$ ) with final reenlistment action (computed in the total development sample and in each occupational subsample)
6. Set F - item retest correlation coefficients (computed in the 33-month subsample)
7. Set G - item correlation ( $\phi$ ) with final reenlistment action (computed in the 33-month subsample and applying to the second administration).

Item correlation in Sets C, D, E, and G were longitudinal validity coefficients inasmuch as criterion data were obtained after test administration (after one year in the case of Sets C and D, after three years in the case of Set E, and after three months in the case of Set G). The final predictive validity coefficients in Set E were considered the most important for scale construction.

#### CONSTRUCTION OF THE PREDICTOR SCALES

##### GENERAL PREDICTOR SCALE

Item statistics in Sets A-G were used to identify items which could be included in a predictor scale generally valid across all occupational areas represented in the development sample. A total of 26 items was selected for the general predictor scale, most weight being given to final predictive validities in Set E. The items were selected on the basis of the following considerations:

1. Item p-values (Set A) in an acceptable range (.10 to .90) for the keyed alternative (keying in the reenlistee direction).
2. Item statistics in Set B (CR's indicative of relationship to initial reenlistment intention) significant at or beyond the .01 level of confidence.



3. Item statistics in Set C (validity for reenlistment intention) and/or item statistics in Set G (validity for reenlistment action) at end of one year significant at or beyond the .05 level of confidence.

4. Predictive validity coefficients for final reenlistment action in Set E significant at or beyond the .05 level of confidence.

Two items were included in the general key in spite of a significantly negative correlation with job performance (Set D statistics) because final predictive validity was substantial (.12 and .15). The general predictor scale with the item selection statistics is presented in Appendix Table A-1.

#### OCCUPATIONAL PREDICTOR SCALES

Eleven occupational predictor scales were constructed, one in each occupational subsample. Each scale consisted of 22 items correlated with reenlistment action in a specific occupational area. Since previous research showed a tendency for men with lower aptitudes to be more interested in reenlistment, items showing negative correlation with job performance were avoided. Items for each scale were selected on the basis of the following considerations, most weight being given to the final predictive validity coefficients in Set E in each subsample:

1. Item p-values (Set A) in an acceptable range (.10 to .90).
2. Final predictor validity coefficients significant at or beyond the .05 level.
3. Job performance validity coefficients (Set D) positive or insignificant.
4. No overlap with items in the general predictor key.

The occupational predictor scales, with the item selection statistics, are presented in Appendix Table A-2.

#### DEVELOPMENT OF THE SUPPRESSOR SCALES

An analysis of the results obtained on the first and second administration of the experimental instrument revealed a marked change from a favorable to an unfavorable attitude toward the Army after service experience. Many items on which this change occurred were correlated with initial reenlistment intention but not with final reenlistment action. A true suppressor key would attempt to remove reliable but non-valid variance from the predictor through items correlated with the predictor but not with the criterion. Since initial intention was the best single predictor, a quasi-suppressor scale was constructed of items which showed good relationship to initial intention but near-zero correlation with the criterion of actual reenlistment.

Items were selected for the quasi-suppressor scale on the basis of the following considerations:

1. Item relationship to initial reenlistment intention (Set B statistics) significant at or beyond the .01 level of confidence.
2. Item correlation with final reenlistment action insignificant (Set E) statistics in the neighborhood of .00).
3. Original item p-values in a satisfactory range (.10 - .90).

Three scales were identified which were differentiated on the basis of Set C statistics (one year predictive validity) and Set G statistics (retest item correlation with reenlistment). Suppressor Scale I consisted of 39 items with insignificant Set C and Set G validity coefficients. Suppressor Scale II consisted of 23 items with significant Set C coefficients and, in most cases, significant Set G coefficients. Suppressor Scale III consisted of 16 items with insignificant Set C validity coefficients and significant Set G coefficients. The suppressor scales, with the item selection statistics, are presented in Appendix Table A-3. In general, the items selected were uncorrelated with job performance when keyed in the suppressor direction.

#### DEVELOPMENT OF THE UNRELIABILITY SCALE

The retest correlation coefficient (Set F statistics) of items in the general predictor scale were generally low, ranging from .09 to .35 (see Appendix Table A-1). The most valid predictor, reenlistment intention, had a test-retest correlation of .20 (after 33 months). In view of the lability of career intention, a special effort was made in the present study to develop a scale which would indicate to what extent an individual's score on the general predictor scale could be considered stable. Whereas the suppressor scale is used to identify and remove reliable but nonvalid variance from the predictor scores, a lability scale would identify for special treatment those cases whose scores were unstable. Each scale would sharpen the accuracy of predicted reenlistment action.

The possibility of developing a scale to measure response lability over time were suggested by results obtained in the retest subsample on three-choice and five-choice items incorporated in the experimental inventory. On many items which were uncorrelated with reenlistment action or job performance, the retest correlation of one or two alternatives was markedly lower than that of the other alternatives. A total of 39 items of this nature (p-values for the keyed alternative ranging from .10 to .90) were selected for the lability scale (items keyed in the direction of disagreement). The scale, with the item retest coefficients for each alternative, is presented in Appendix Table A-4.



#### SUMMARY

Research effort to obtain maximal prediction of reenlistment in this study resulted in the construction of a predictor scale generalizing across all occupational areas, a set of eleven occupational predictor scales applying to specific job areas, a set of three quasi-suppressor scales, and a scale of lability of career intention. The occupational predictor scales were developed to provide greater specificity in prediction when combined with the general predictor scale. The suppressor scales were developed in an attempt to eliminate non-valid variance from the general predictor scale. The lability scale was developed as a means of excluding unreliable cases from the primary sample. The usefulness of the predictor scales, the suppressor scales, and the lability scale will be determined in subsequent cross-validation studies.

#### REFERENCES

Helme, W. H., Kotula, L. J., and Fitch, D. J. Preliminary evaluation of measures to predict Army reenlistment. USAPRO Technical Research Note 110. December 1960.

Johnson, C. M., Klieger, W. A., and Kotula, L. J. Construction of an experimental paper-and-pencil test to predict reenlistment. USAPRO Research Memorandum 58-3. February 1958.

Exploratory study of psychological factors in Army reenlistment. Dancer-Fitzgerald and Sample, Inc. February 1957.

## Appendix

### ITEM STATISTICS USED IN CONSTRUCTING A GENERAL REENLISTMENT PREDICTOR SCALE AND SUPPLEMENTARY SCALES

- Set A      Original item p-values in random subsample.
- Set B      CR's indicative of relationship to reenlistment intention upon entry into service.
- Set C      Item correlation coefficients (biserial) with one-year intention.
- Set D      Item correlation coefficients (biserial) with a one-year job performance rating.
- Set E      Item correlation coefficients ( $\phi$ ) with final reenlistment action (first test administration).
- Set F      Item retest correlation coefficients.
- Set G      Item correlation coefficients ( $\phi$ ) with final reenlistment action (second test administration after 33 months of service).
- Sets A-G   All statistics reported are for the keyed alternative (keying in reenlistee direction; each alternative was compared with all other alternatives).



Table A-1

## GENERAL PREDICTOR SCALE WITH ITEM STATISTICS

Item No.	Key	Test Section	Item Statistics						
			Set A	Set B	Set C	Set D	Set E	Set F	Set G
25	B	I	54	4.59	11	00	09	33	13
71	B		86	8.23	22	02	09	21	13
74	A		68	10+	30	-14	15	22	36
75	A		42	10+	26	-01	12	35	14
82	A		46	10+	31	-04	17	24	24
95	A		71	10+	23	00	11	18	36
98	A		40	9.56	11	-08	12	09	00
122	A		47	10+	14	04	12	11	25
137	A		37	4.16	20	-13	12	18	23
146	B		66	3.75	26	-01	12	48	06
152	A		37	10+	41	-04	23	20	45
154	A		34	10+	39	01	20	14	43
158	A	II	74	8.46	16	-03	12	32	16
194	A		50	6.01	11	-05	10	25	06
225	A		62	3.84	15	-08	11	31	13
14	A	III	42	10+	18	-11	12	27	19
78	C		23	2.41	13	-09	11	13	08
4	A	IV	59	10+	17	-09	13	27	27
18	B		32	10+	06	-01	10	21	27
24	D		22	10+	31	07	20	23	31
26	C		18	10+	38	-07	19	27	36
29	A		24	10+	17	-09	09	21	24
33	E		15	10+	25	-05	16	17	43
56	C		26	8.47	-02	06	13	10	23
63	A		44	6.00	23	-09	10	14	14
110	B		71	10+	17	-11	09	19	13

Table A-2

## OCCUPATIONAL PREDICTOR KEYS WITH ITEM STATISTICS

I. Combat I (High)			Item Statistics			
Item No.	Key	Test Section	Set A	Set D	Set E	Set F
8	B	I	59	00	15	48
9	B		68	-08	13	62
10	A		15	-09	11	37
11	A		11	03	13	36
14	A		22	01	13	55
19	B	II	26	-09	11	66
132	B		57	-06	13	42
187	A		64	-02	12	16
36	D		34	-02	14	10
38	D		52	02	12	22
39	E	IV	27	09	17	19
43	A		17	13	12	17
60	C		35	10	14	11
2	A		40	00	10	70
22	A		27	-04	10	55
30	B	V	28	-08	11	43
64	A		53	-06	13	16
71	A		45	04	14	33
100	A		18	-07	18	16
125	B		79	10	12	25
133	A	VI	42	-08	12	20
203	A		40	01	12	32

Table A-2 (Cont'd)

II. Combat II (Low)			Item Statistics			
Item No.	Key	Test Section	Set A	Set D	Set E	Set F
28	B	I	52	12	16	44
32	B		15	-04	17	37
57	A		44	04	17	50
132	B	II	43	-06	20	42
206	B		11	-01	17	17
209	A		62	-02	17	31
5	E	IV	24	02	13	26
7	E		33	12	19	29
19	A		44	00	16	29
27	A		25	-01	17	08
35	A		24	-03	30	10
40	E		39	02	15	24
14	A	V	20	07	26	53
15	A	VI	83	11	14	57
52	A		32	-07	17	28
58	A		80	16	16	20
139	A		42	00	17	10
155	A		52	14	21	45
158	B		79	08	22	15
185	B		88	13	16	11
190	A		37	-05	16	08
205	B		72	16	15	36



Table A-2 (Cont'd)

## III Electronics

Item No.	Key	Test Section	Item Statistics			
			Set A	Set D	Set E	Set F
1	A	I	56	20	13	74
92	A		85	04	15	19
108	A		71	00	12	23
131	A		66	09	14	35
132	B		57	-06	14	42
161	B	II	15	09	13	11
210	A		84	01	12	19
42	D	IV	61	02	14	11
43	E		15	-05	15	16
44	D		43	-07	14	07
44	A	VI	48	09	15	18
65	B		60	07	13	34
68	B		47	04	12	18
70	B		68	09	15	13
93	A		64	18	13	18
96	B		64	09	12	31
100	B		82	05	12	16
108	B		81	03	13	35
118	B		75	-04	16	20
132	B		72	14	12	16
200	A		53	11	12	21
231	B		18	05	18	13



Table A-2 (Cont'd)

IV. Mechanical I (High)

Item No.	Key	Test Section	Item Statistics			
			Set A	Set D	Set E	Set F
10	A	I	15	-09	12	37
15	A		15	-04	15	57
35	A		24	10	16	74
61	B		34	04	13	48
88	B		59	04	13	25
177	A	II	82	-05	15	12
186	A		81	13	13	17
207	A		70	-05	13	21
213	A		87	-04	13	21
13	D	IV	19	02	22	01
36	D		*	-02	14	10
17	A	V	48	-09	15	40
23	B		32	-05	12	39
44	A	VI	48	09	12	18
54	A		21	01	11	27
139	A		42	00	14	10
151	A		71	04	12	23
158	A		21	-08	15	17
167	B		78	11	11	34
171	B		57	05	13	32
202	A		54	04	13	28
213	A		27	-09	13	21

\* Missing data.

Table A-2 (Cont'd)

V. Mechanical II (Low)

Item No.	Key	Test Section	Item Statistics			
			Set A	Set D	Set E	Set F
19	A	I	74	08	20	66
35	A		24	10	15	74
39	A		54	00	19	47
85	B		47	00	18	21
118	A		25	-10	16	36
177	A	II	82	-05	19	12
206	A		89	01	18	17
207	A		70	-05	19	21
209	A		62	-02	20	31
231	A		81	04	27	33
11	E	IV	12	-01	17	16
39	E		27	09	21	20
43	C		13	-06	34	26
46	D		37	02	24	15
52	A		36	07	18	37
4	A	V	56	-02	15	28
48	B		15	12	18	38
71	B		55	-04	22	33
83	B		84	13	18	25
108	B		81	03	17	35
166	B	VI	72	19	18	28
215	A		82	06	17	03

Table A-2 (Cont'd)

## VI. Operator

Item No.	Key	Test Section	Item Statistics			
			Set A	Set D	Set E	Set F
18	B	I	51	-06	15	65
24	A		25	04	16	27
44	B		51	13	15	46
52	B		67	-05	20	51
56	B		65	-05	15	32
124	A		66	-04	18	12
168	A	II	79	01	18	17
35	A	IV	24	-03	18	10
39	C		12	-04	19	22
4	A	V	56	-02	22	28
7	A		29	05	18	40
9	A		15	-08	19	37
10	A		31	01	20	37
19	B		65	-07	17	48
94	A	VI	57	00	18	16
98	A		40	06	15	38
102	A		26	01	19	12
126	B		28	04	18	26
140	A		36	-02	18	10
151	A		71	04	19	23
191	A		51	05	15	34
204	A		78	13	15	34



Table A-2 (Cont'd)

VII. Driver

Item No.	Key	Test Section	Item Statistics			
			Set A	Set D	Set E	Set F
51	A	I	28	-13	32	26
85	B		47	00	15	21
142	A		27	-04	15	14
159	A	II	85	05	18	22
160	A		73	-02	15	33
167	A		50	-07	18	25
168	A		79	01	15	17
169	A		77	-07	15	31
180	A		85	-02	17	22
184	A		71	-04	21	22
204	A		88	01	17	18
231	A		81	04	23	33
51	D	IV	27	15	21	10
4	A	V	56	-02	20	28
15	A		83	11	20	57
23	B		32	-05	22	39
82	B	VI	32	-05	19	20
96	B		64	09	22	31
105	B		67	06	20	28
106	B		56	11	19	19
202	A		54	04	26	28
224	B		68	12	24	22



Table A-2 (Cont'd)

## VIII. Clerk

Item No.	Key	Test Section	Item Statistics			
			Set A	Set D	Set E	Set F
3	A	I	15	02	12	76
9	B		68	-08	16	62
15	A		15	-04	20	57
18	B		51	-06	21	65
46	B		77	-05	18	64
47	B		83	10	16	50
50	B		74	-05	20	43
54	B		70	00	15	37
57	B		56	-04	15	50
58	B		65	04	16	51
59	B		77	02	16	54
63	A		74	-06	20	48
64	A		48	04	20	55
147	B		66	-06	20	32
42	D	IV	61	02	17	11
14	B		80	-07	16	53
22	A	V	27	-04	15	55
68	B		47	04	19	18
105	B		67	06	14	28
106	B		56	11	16	19
125	B		79	10	15	25
198	B		89	22	16	22

Table A-2 (Cont'd)

IX. Service			Item Statistics			
Item No.	Key	Test Section	Set A	Set D	Set E	Set F
55	B	I	85	00	29	36
62	B		36	10	27	43
63	B		26	07	40	48
70	B		81	27	32	63
76	A		79	-05	28	28
77	A		28	09	45	30
80	B		20	00	45	27
124	B		34	05	33	13
142	B		73	04	30	13
189	A		83	03	28	18
191	A	II	76	-05	30	23
6	D	IV	11	16	33	19
8	D		54	00	49	17
20	D	VI	20	-02	27	12
96	B		64	09	41	31
135	B		40	-01	27	24
169	A		72	12	30	31
175	A		68	06	31	21
195	B		83	13	30	14
206	B		66	23	40	19
217	B		79	-01	28	26
220	A		37	00	46	30



Table A-2 (Cont'd)

## X. Military Police

Item No.	Key	Test Section	Item Statistics			
			Set A	Set D	Set E	Set F
10	A	I	15	-09	20	37
24	B		75	-04	26	27
36	B		45	05	18	50
57	B		57	-04	22	50
73	B		75	07	27	68
83	B		50	09	18	26
92	B	II	15	-04	19	19
186	A		81	13	20	18
189	A		83	03	19	18
226	A		86	02	19	08
14	A	IV	14	20	22	27
23	E		43	00	21	26
39	E	V	27	09	23	20
9	B		86	07	15	39
19	B		65	-07	18	48
20	A	VI	46	-07	22	55
36	A		33	01	18	08
70	A		32	-09	32	12
98	A		46	06	23	38
108	A		19	-03	29	36
146	B		15	-03	22	19
192	B		72	02	19	25



Table A-2 (Cont'd)

## XI. Technical

Item No.	Key	Test Section	Item Statistics			
			Set A	Set D	Set E	Set F
2	A	I	11	03	16	80
11	A		11	03	18	36
19	B		26	-09	24	66
35	A		24	10	20	74
36	B		55	-04	14	50
61	A		66	-03	14	48
77	A		28	09	16	30
85	A		53	00	16	21
109	B		56	-04	16	21
141	A		83	-09	15	13
21	E	IV	13	-09	21	12
23	B		11	-05	16	04
28	A		19	-05	22	25
54	B		33	07	15	15
55	B		11	-01	22	17
5	B	V	68	-07	16	53
78	A	VI	65	-05	17	31
112	A		48	00	16	17
117	B		16	-14	17	-24
148	B		25	-11	16	22
176	A		46	-08	18	08
196	A		38	-07	15	14

Table A-3

## SUPPRESSOR SCALES WITH ITEM STATISTICS

I. Suppressor Scale I (39 items)<sup>a</sup>

Item No.	Key	Test Section	Item Statistics						
			Set A	Set B	Set C	Set D	Set E	Set F	Set G
9	A	I	32	3.25	-01	01	-04	60	00
36	A		45	4.34	-05	05	-05	45	05
83	A		50	5.16	-09	-09	00	26	-05
93	A		71	6.34	05	06	00	21	04
97	A		75	8.45	05	-02	02	29	04
106	A		68	3.59	-11	-03	00	08	03
117	B		83	4.58	04	10	00	38	04
118	B		75	5.21	02	10	-01	35	02
177	A	II	82	5.41	02	-05	03	12	02
231	A		81	7.96	-05	04	03	33	00
8	C	III	48	3.76	-15	-02	01	19	06
15	A		31	4.80	-02	02	-01	22	-04
44	A		47	3.40	01	00	-02	29	-08
59	C		52	4.03	-09	07	03	16	04
65	A		64	4.41	00	09	02	20	-11
86	A		71	4.45	06	11	00	11	00
8	D	IV	54	4.35	06	00	02	17	02
11	B		42	3.81	-08	04	-03	25	-03
23	E		43	7.21	-03	00	00	26	05
27	D		41	7.47	-08	07	04	27	-06
31	B		37	4.19	-08	03	04	14	-01
23	A	V	68	2.87	-11	05	-07	39	-01
54	A	VI	21	4.37	02	01	00	27	04
64	B		47	3.51	03	06	-05	16	-03
70	B		68	4.27	-06	09	-03	12	02
71	B		55	4.89	-04	-04	-03	33	-03
91	B		61	3.53	00	03	04	30	-03
138	B		54	3.77	-01	07	02	32	-03
139	A		42	5.26	04	00	03	10	04
141	B		66	3.39	-02	-05	01	50	03
158	B		79	5.49	00	08	02	16	00
161	A		33	3.75	03	-12	03	32	-04
163	B		78	5.79	-04	07	00	22	03
164	B		56	5.78	-01	05	01	24	02
171	B		57	4.13	-03	04	04	31	-01
179	B		85	4.06	01	05	01	21	-11
184	B		70	4.70	-19	11	-01	30	-01
191	A		51	3.49	05	05	-01	33	03
203	B		60	4.11	04	-01	-04	32	00

<sup>a</sup>Significant item correlations in Set B; insignificant item correlations in Sets C, E, and G (or significant correlation in opposite direction).



Table A-3 (Cont'd)

II. Suppressor Scale II (23 items)<sup>b</sup>

Item No.	Key	Test Section	Item Statistics						
			Set A	Set B	Set C	Set D	Set E	Set F	Set G
84	A	I	28	10+	16	04	05	16	24
116	B		73	4.91	16	01	03	28	03
120	A		50	8.72	11	-05	06	18	31
126	A		84	10+	17	-05	04	08	17
141	A		83	10+	25	-09	06	13	16
145	A		78	6.27	20	-04	01	27	17
159	A	II	85	7.14	18	05	05	21	11
175	A		87	4.38	11	05	03	16	16
180	A		85	6.04	20	-02	03	22	13
210	A		84	6.03	11	01	03	19	15
213	A		87	6.36	22	04	04	20	10
4	A	III	18	9.09	20	01	07	28	29
56	A		50	8.38	14	-13	05	19	12
64	A		37	3.35	13	06	01	21	00
70	A		58	10+	24	02	07	15	19
25	D	IV	75	10+	19	13	03	16	16
41	B		55	2.96	17	00	01	24	06
130	B	VI	74	3.54	13	09	04	35	04
152	B		55	8.39	19	00	05	38	02
153	B		36	4.83	14	-05	01	32	-02
165	A		72	3.58	13	07	03	17	-03
202	A		54	6.90	21	04	07	28	09
207	B		32	4.52	13	03	04	23	09

<sup>b</sup> Significant item correlations in Sets B and C; insignificant item correlations in Set E.



Table A-3 (Cont'd)

III. Suppressor Scale III (16 items)<sup>c</sup>

Item No.	Key	Test Section	Item Statistics						
			Set A	Set B	Set C	Set D	Set E	Set F	Set G
48	A	I	26	3.70	01	-01	03	33	19
103	A		31	3.93	-01	-13	06	17	13
128	A		86	8.78	01	-06	01	22	22
135	A		81	10+	-03	-10	02	30	13
142	B		73	3.79	-02	04	03	13	17
166	A	II	86	6.36	-03	-01	06	15	16
186	A		81	6.09	09	-13	04	18	12
194	A		50	6.01	-04	-05	03	25	15
198	A		71	4.86	09	03	00	26	13
204	A		88	6.11	09	01	05	18	20
221	A		84	5.62	-02	-01	05	34	15
226	A		86	7.25	07	02	02	08	14
17	A	III	23	5.18	11	00	07	20	19
103	A		74	2.93	-04	12	01	02	22
15	E	IV	23	3.44	06	-01	-01	46	14
35	A		24	3.25	05	-03	-03	10	20

<sup>c</sup>Significant item correlations in Sets B and G; insignificant item correlations in Sets C and E.

Table A-4

LIABILITY SCALE WITH ITEM RETEST CORRELATION COEFFICIENTS FOR  
EACH ALTERNATIVE (40 items)

Item No.	Key	Test Section	Item Reliabilities for each Alternative				
			A	B	C	D	E
6	B	III	32	06	22		
7	B,C		15	-01	00		
9	B		18	08	21		
17	B		20	03	27		
20	A		04	11	21		
26	B		36	16	31		
32	B		24	01	14		
33	A,B		09	-02	24		
34	B		23	07	14		
38	B		35	07	20		
43	B		26	03	18		
44	B		29	-09	15		
49	B		33	-01	21		
51	B		18	-02	25		
60	B		13	03	14		
66	A		00	20	23		
67	A,B		-02	01	16		
69	B		13	03	13		
72	B		19	05	32		
80	B		17	03	24		
98	B		20	04	23		
99	A,B		00	-05	21		
100	B		14	02	24		
101	A,B	IV	15	10	33		
1	A,B,C		01	-03	-02	14	26
2	B		21	08	24	19	17
5	A		03	12	20	23	26
9	A,B		05	-01	33	23	20
13	D		14	14	31	01	19
21	A,C		01	22	-02	26	11
22	E		11	10	17	23	-02
27	A,B,E		07	02	15	29	09
30	B,C,D		17	01	02	06	27
39	B		25	02	22	20	19
40	B,C		15	04	-02	15	24
41	D,E		25	24	24	09	12
46	B		21	01	20	15	17
53	A,C		11	25	-03	24	33
58	C		25	19	01	15	27
59	B,C		35	08	12	28	21